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refractory metal, refractory metal alloy, refractory metal compound, and refractory metal alloy compound on at least a portion of said electroplated layer, wherein said refractory metal compound is selected from the group consisting of nitrides, carbides, carbonitrides, oxides and reaction products of said refractory metal, oxygen and nitrogen, and wherein said refractory metal alloy compound is selected from the group consisting of nitrides, carbides, carbonitrides, oxides and reaction products of said refractory metal alloy, oxygen and nitrogen.

REMARKS

Claim 1 has been amended and is presented for reconsideration. Reconsideration of the rejection of claims 2, 4, 5, 7-24, 26-36 and 55-63 is respectfully requested.

Claims 1, 2, 4, 5, 7-9, 21-24, 26-28 and 55-63 stand rejected under 35 USC 103(a) as being unpatentable over U.S. patent No. 5,413,874 (Moysan '874) in view of European Patent Application No. 0 486 711 A1 (EP '711).

This rejection is respectfully traversed.

As stated in the Background of the Invention:

"... any water spots or any other surface defects such as nickel or chrome stains from or caused by the electroplating process show through and indeed are accentuated by the thin vapor deposited coating ...

It is thus currently necessary to thoroughly inspect, clean and dry each article as it comes out of the electroplating bath. One conventional way of cleaning the electroplated articles is to run the articles through a water based cleaning system and use nitrogen drying to dry the articles. This is quite expensive and not always successful. Another method involves hand drying and cleaning each individual article. This hand drying, while more effective than a nitrogen based drying system, is very labor intensive and, therefore, also quite expensive. Hand

drying also involves handling the electroplated articles ...".

The present invention, as recited in the instant claims, solves and eliminates the afore-discussed problems. None of the references cited by the Examiner suggests or mentions this problem!

The instant claims recite a process which comprises electroplating an article, drying it by subjecting it to pulses of air, and applying a physical vapor deposition coating on the dried electroplated article. The '874 patent is deficient in teaching subjecting the electroplated article to pulses of air to dry the article before applying a physical vapor deposition coating on the electroplated article. It is thus deficient in disclosing the heart and inventive concept of applicants' invention.

The EP '711 patent is entirely deficient in disclosing, or even suggesting, that a physical vapor deposition coating is applied on the electroplated and pulse blow dried article. It was applicants who recognized the problem presented by applying a physical vapor deposition coating on an electroplated article, and proceeded to solve this problem efficiently and economically. It is well settled patent law that patentability can be based on the discovery of the source of the problem, even though the claimed subject matter which is free of the problem by hindsight is obvious. In re Linnert et al, 135 USPQ 307 (CCPA 1962).

As stated by the CCPA in In re Dien, 152 USPQ 550 (CCPA 1967):

" ... the mere existence of an unsatisfactory process and the attendant incentive to seek improvement do not negative patentability. We think that one cannot fairly infer obviousness from the inadequacies of the prior art."

It is respectfully submitted that the combination of the Moysan and EP '711 references does not render the instant claims obvious. It is settled patent law that the mere fact that references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. ACS Hospital Systems, Inc. v. Montefiore Hospital, 221 USPQ 929 (CAFC 1984). What is there in either of these two cited references that suggests the desirability of combining them? It is respectfully submitted that this combination is a result of hindsight reconstruction in view of applicants' disclosure. Such hindsight reconstruction is improper.

Claims 29-32 stand rejected under 35 USC 103(a) as being unpatentable over Moysan '874 in view of EP '711 and further in view of U.S. patent No. 5,626,972 (Moysan '972) and U.S. patent No. 4,029,556 (Monaco).

This rejection is respectfully traversed.

Applicants are not claiming electroplating a chromium layer over a nickel layer. What they are claiming in these claims is subjecting a plated article having an electroplated chromium layer over an electroplated nickel layer to pulses of air to dry the surface of said chromium, and thereafter applying physical vapor deposited layers over the chromium layer. The cited Moysan ('874), Moysan ('972) and Monaco references are all deficient in teaching, or even suggesting, subjecting the surface of the electroplated layer to pulses of air to dry and clean said surface. The EP '711 reference is deficient in teaching a PVD layer applied over the pulse blow dried article. It is respectfully submitted that the only motivation or reasons for combining the EP '711 reference with the Moysan and Monaco

references is provided by applicants' disclosure. This hindsight combination of references is improper.

Claims 10-13, 18 and 20 stand rejected under 35 USC 103(a) as being unpatentable over Moysan '874 in view of EP '711 as applied to claims 1, 2, 4, 5, 7-9, 21-24, 26-28 and 55-63 above, and further in view of Moysan '972 and U.S. patent No. 5,558,759 (Pudem) and U.S. patent No. 4,273,837 (Coll-Palagos).

This rejection is respectfully traversed.

This rejection, which utilizes a combination of five references, must fall of its own weight. In applying this rejection the Examiner is ignoring the decision of the Board of Appeals in Ex parte Kuhn, 132 USPQ 359 (POBA 1961) which held that the fact a claimed product is within the broad field of the prior art and one might arrive at it by selecting specific items and conditions does not render the product obvious in the absence of some directions or reasons for making such selection. In this rejection the Examiner is picking and choosing the isolated teachings from five references and combining them to arrive at a composite reference which renders the instant claims obvious.

In arriving at this rejection the Examiner has used a distillation and rearrangement process which only renders applicants' invention obvious by the use of hindsight. As stated in Northern Engineering and Plastics Corp. v. Eddie et al, 210 USPQ 784, 787 (3rd Cir. 1981):

We must also guard against the hindsight which renders every pure concept natural, intuitive, and "obvious" just because it is fundamentally simple.

With hindsight applicants' invention may appear simple. The mere fact that applicants' invention appears simple with the benefit of hindsight does not make it obvious at the time of the invention. Hindsight is insidious in that it uses applicant's

own teaching against him. We must always be aware of this type of rejection. See W.L. Gore & Associates v. Garlock Inc., 220 USPQ 303 (CAFC 1983).

Claims 14-17, 19 and 33-36 stand rejected under 35 USC 103(a) as being unpatentable over Moysan '874 in view of Moysan '972, Monaco and further in view of U.S. patent No. 5,922,478 (Welty).

This rejection is respectfully traversed.

In applying this rejection the Examiner is taking the Moysan '874 reference and by hindsight is combining it with the secondary references using applicants' invention as a road map to find the desired traits the Examiner wants in different references and combining them in a way that the Examiner wants to meet the limitations of the claim. However, apart from applicants' own disclosure, there is no apparent reason or desirability at the time the invention was made for a person of ordinary skill in the art to combine these four references together. There is no apparent reason, desirability or motivation to combine these four references absent applicants' disclosure and therefore the combination is improper.

Furthermore, none of these four references discloses pulsing air onto the electroplated article to dry the surface thereof.

In view of the foregoing this application is now believed to be in condition for allowance, and action to such effect is respectfully solicited.

Respectfully submitted,



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